

CLAIMS

What is claimed is:

1. A method of controlling a recording operation of an optical disc recording apparatus which records data to a recordable optical disc having a defect, the method comprising:
 - based on a length of the defect, classifying the defect into a first category indicating that the data is normally recordable and a second category indicating that the data is not normally reproducible even though the data is normally recordable;
 - detecting the defect while recording the data to the recordable optical disc;
 - if the defect is detected, continuing recording of the data in the recordable disc while controlling a servo unit to hold a servo tracking by using a previous servo control value which is used before the defect occurs;
 - determining the length of the defect and a type of the defect based on the length of the defect; and
 - as a result of the determining, if the defect corresponds to the first category, assuming that the data is normally recorded in a defect region and continuing recording of the data, or if the defect corresponds to the second category, further recording of the data recorded in the defect region in another region.
2. The method of claim 1, further comprising:
 - classifying the defect into a third category indicating that the data cannot be normally recorded and the defect causes a servo error;
 - as a result of the determining, if the defect corresponds to the third category, stopping the recording operation.
3. The method of claim 1, wherein the recordable optical disc is a recordable compact disc.

4. The method of claim 1, wherein the recordable optical disc is a recordable digital video disc.

5. A method of controlling a recording operation of an optical disc recording apparatus which records data to a recordable optical disc having a defective region, comprising:
detecting the defective region of the recordable optical disc;
determining a length of the defective region, while recording the data to the recordable optical disc;
controlling a servo unit based on a value of a servo control just prior to a detection of the defective region if recording the data to the defective region;
classifying the defective region into a first category in which the data is recordable in the defective region and into a second category in which the data is not reproducible from the defective region even though the data is recordable therein, according to the length of the defective region; and
if a classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc.

6. The method of claim 5, further comprising:
classifying the defective region into a third category in which the data cannot be recorded; and
if the classified result is in the third category, stopping the recording operation.

7. The method of claim 5, wherein the recordable optical disc is one of a recordable compact disc and a recordable digital video disc.

8. An optical disc recording apparatus which records data to a recordable optical disc having a defect, comprising:
an optical pickup generating a reproduction signal;
one or more servos to move the optical pickup;

a processing unit to detect a servo error signal from the reproduction signal and to control the one or more servos according to the reproduction signal;

a defect detection unit to detect a defect on the optical disc and to generate a defect detection signal when the defect is detected; and

a defect type determination unit to determine a type of the defect with reference to the defect detection signal provided from the defect detection unit based on a length of a defective region of the defect.

9. The apparatus of claim 8, wherein the type of the defect is determined by the defect type determination unit based on whether the data is recordable in the defective region or the data is not reproducible from the defective region even though the data is recordable therein.

10. The apparatus of claim 9, wherein the type of the defect is further determined by the defect type determination unit based on whether the data cannot be recorded in the defective region.

11. The apparatus of claim 10, wherein the recordable optical disc is one of a recordable compact disc and a recordable digital video disc.

12. A program executed by a processor to record data to a recordable optical disc having a defective region by:

detecting the defective region of the recordable optical disc;

determining a length of the defective region, while recording the data to the recordable optical disc;

controlling a servo unit based on a value of a servo control just prior to a detection of the defective region if recording the data to the defective region;

classifying the defective region into a first and category in which the data is recordable in the defective region and a second category in which the data is not reproducible from the defective region even though the data is recordable therein, according to a length of the defective region; and

if the classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc.

13. A method of controlling a recording operation of an optical disc recording apparatus which records data to a recordable optical disc having a defective region, the method comprising:

detecting the defective region of the recordable optical disc;

determining a length of the defective region, while recording the data to the recordable optical disc;

controlling a servo unit based on a value of a servo control just prior to a detection of the defective region, if recording the data to the defective region;

classifying the defective region into a first category, if the length of the defective region is less than a first reference length and into a second category, if the length of the defective region is between the first reference length and a second reference length; and

if a classified result is in the first category, recording the data in the defective region or if the classified result is in the second category, recording the data in a second region of the optical recordable disc.

14. The method of claim 13, wherein the first reference length is a maximum length of the defective region where a servo status is stable and data is readable without any additional operation of the optical disc recording apparatus after data is recorded.

15. The method of claim 13, wherein the second reference length is a maximum length of the defective region where a servo status is stable, but errors occur when the data is read after being recorded.

16. An optical disc recording apparatus which records data to a recordable optical disc having a defect, comprising:

an optical pickup generating a reproduction signal;

one or more servos to move the optical pickup;
a processing unit to detect a servo error signal from the reproduction signal and to control the one or more servos according to the reproduction signal;
a defect detection unit to detect a defect on the optical disc and to generate a defect detection signal when the defect is detected; and
a defect type determination unit to determine a type of the defect with reference to the defect detection signal provided from the defect detection unit based on whether the defective region is greater than a reference length.

17. The apparatus of claim 16, wherein the reference length is a maximum length of the defective region where a servo status is stable and data is readable without any additional operation of the optical disc recording apparatus after data is recorded.

18. The apparatus of claim 16, wherein the defect type determination unit further determines whether the defective region is greater than a second reference length, and stops the recording of the data if the defective region is determined to be greater than the second reference length.

19. The apparatus of claim 18, wherein the second reference length is a maximum length of the defective region where a servo status is stable, but errors occur when the data is read after being recorded.